Hisense

KFR-3208GW/AE

SPLIT TYPE AIR CONDITIONER

INSTRUCTION INSTALLATION MANUAL

Hisense Corporation

Features

This air conditioner provides with cooling, heating, and drying functions. Details of the functions are below; refer to these descriptions when using the air conditioner.

- **Compact Size**
  This model is smaller than its predecessors and yet offers the same capabilities.

- **Microprocessor Controlled Operation**
  The interior compartment of the remote control unit contains several features to facilitate automatic operation, clearly displayed for easy use.

- **Simple One-touch Wireless Remote Control**
  The remote control unit has several features to facilitate automatic operation.

- **12-Hour ON or OFF Timer**
  This timer can be set to automatically turn the unit on or off at any time within a 12-hour period.

- **1-Hour OFF Timer**
  This timer can be set to automatically turn off the unit after one hour.

- **Night Setback**
  Pressing this SLEEP button changes the setting of the room temperature thermostat, allowing you to set the temperature at whatever level that you feel comfortable.

- **Automatic and 3-step Fan Speed**
  Auto/High/Medium/Low

- **Air Sweep Control**
  This function moves a flap up and down in the air outlet, directing air in a sweeping motion around the room and providing comfort in every corner.

- **Automatic Switching between Cooling and Heating**
  This unit automatically switches between cooling operation and heating operation according to the difference between the room temperature and the set temperature.

- **Hot start Heating System**
  Right from the start, the air is warm and comfortable. This system prevents any cold blasts at the beginning while the heat pump warming up, or even defrosting.

- **Automatic Restart Function for Power Failure**
  Even when power failure occurs, preset programmed operation can be reactivated once power resumes.

- **Anti-Mold Filter**
  This unit is equipped with an anti-mold filter that inhibits the growth of mold and bacteria.

- **High Power Running**
  Run with strong power and make you feel comfortable quickly.

Contents

Pardon not to inform you if the contents of the manual changes.

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Alert Symbols

WARNING

The symbol refers to a hazard or an unsafe practice which can result in severe personal injury or death.

CAUTION

The symbol refers to a hazard or an unsafe practice which can result in personal injury or product damage.

NOTICE:

If the supply cord is damaged, it must be replaced by the manufacturer or its service agent or a similarly qualified person in order to avoid hazard.
The appliance should be installed with local wiring regulation.
The plug must be easily accessible after installation.
The waste battery shall be disposed properly.
The breaker of the air conditioner should be all-pole switch;and the distance between its two contacts should be no less than 3mm. Such means for disconnection must be incorporation in the fixed wiring.
The appliance should be installed on strong enough suppoter.

Caution Statements

WARNING

1.We recommend that this air conditioner be installed properly by qualified installation technicians in accordance with the installation instructions provided with the unit.
2.Before installation, check if the voltage of the electric supply in your home or office is the same as the voltage shown on the nameplate.

WARNING

3.Do not install the air conditioner where there are fumes or flammable gases, or in an extremely humid space such as a greenhouse.
4.Do not install the air conditioner where excessively high heat-generating objects are placed.

Avoid: To protect the air conditioner from heavy corrosion, avoid installing the outdoor unit where salty sea water can splash directly onto it or in sulphurous air near a spa.

1.All wiring must conform to the local electrical codes.
2.Each unit must be properly grounded.
3.Wiring must be done by a qualified electrician.
4.Consider the capacity of the electric current of your electrical kilowatt-hour meter wires and socket before installation.
5.Power for this air-conditioner is supplied by individual electrical wire.
6.There must be at least one ventilation intake in the area where the heat-pump is mounted.

1.Read this manual carefully before using this air conditioner. If you still have any diffculties or problems, consult your dealer for help.
2.The air conditioner is designed to give you comfortable room conditions. Use this only for its intended purpose as described in this instruction manual.

WARNING

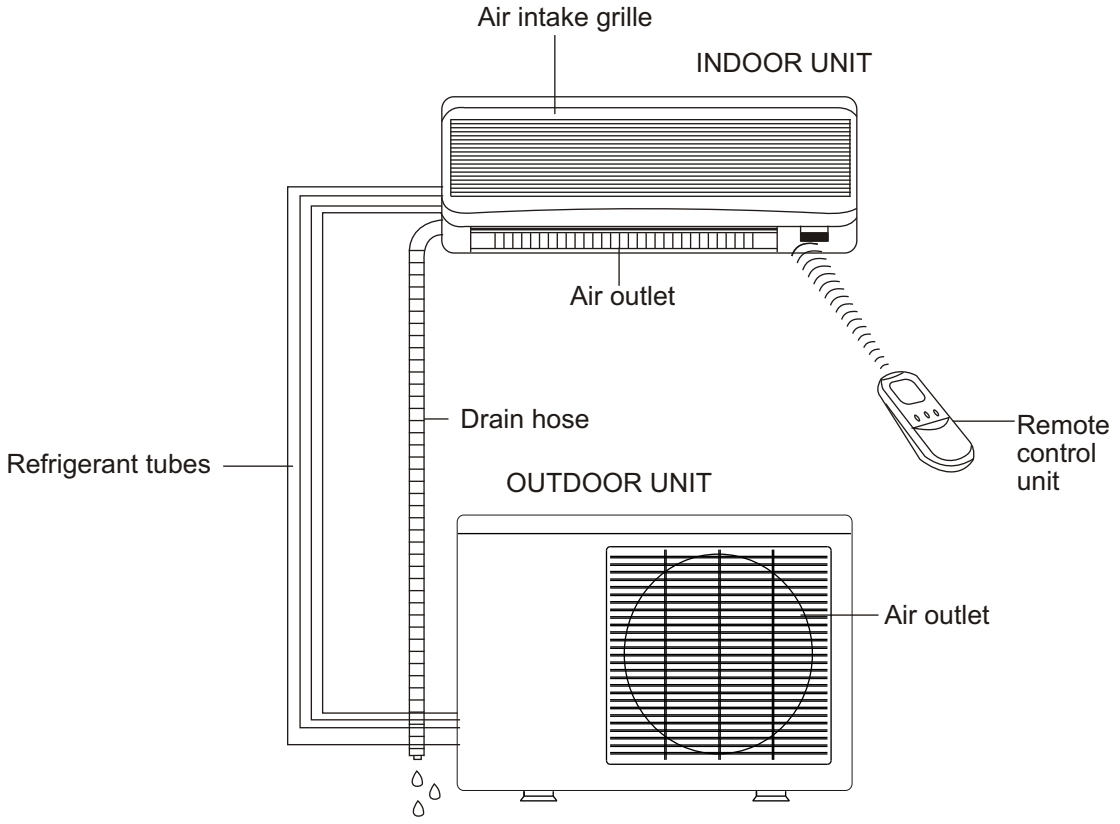
3.Never use store gasoline or other flammable vapor or liquid near the air conditioner - it is very dangerous.
4.The air conditioner has no ventilator for intaking fresh air from outdoors. You must open doors or windows frequently when you use gas or oil heating appliances in the same room, which consume a lot of oxygen from the air. Otherwise there is a risk of suffocation in an extreme case.

CAUTION

1.Do not turn the air conditioner on and off from the power mains switch. Use the ON/OFF operation button.
2.Do not stick anything into the air outlet of the outdoor unit. This is dangerous because the fan is rotating at high speed.
3.Do not let the children play with the air conditioner.
4.Do not cool or heat the room too much if babies or invailds are present.

Composition of the Air Conditioner

1.Diagram of Structure



The appearance of the appliance may differ from some pictures.

NOTE This air conditioner consists of an indoor unit and an outdoor unit. You can control the air conditioner with the remote control unit.

Air Intake	Air from the room is drawn into this section and passes through air filters which remove dust.
Air Outlet	Conditioned air is blown out of the air conditioner through the air outlet.
Remote Control Unit	The wireless remote control unit controls power ON/OFF, operation mode selection, temperature, fan speed, timer setting, and air sweeping.
Refrigerant Tubes	The indoor and outdoor unts are connected by copper tubes through which refrigerant gas flows.
Outdoor(Condensing)Unit	The outdoor units contains the compressor, fan motor, heat exchanger coil, and other electrical components.
Drain Hose	Moisture in the room condenses and drains off through this hose.

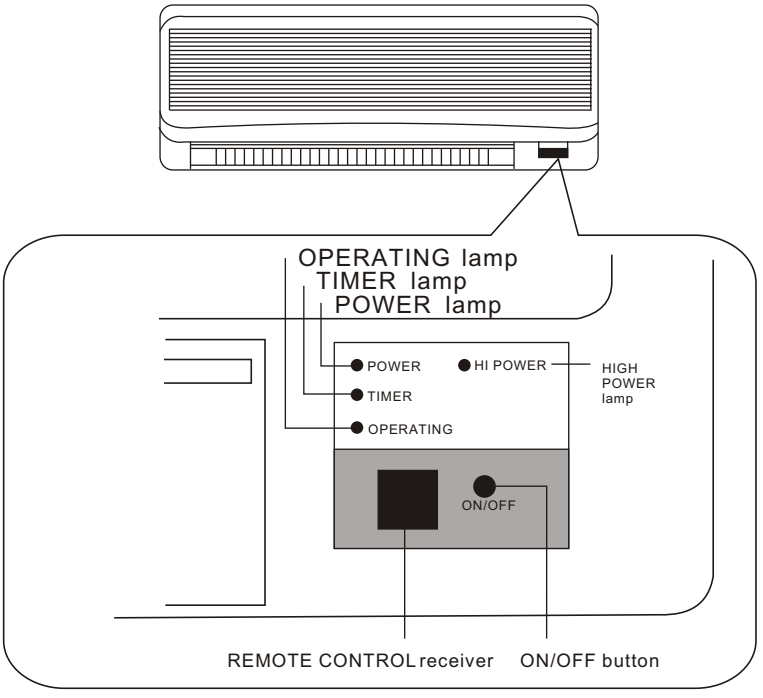
2.Introduction of the Indoor Control Unit

IMPORTANT:

Avoid using radio equipment such as mobile phone near (within 1m) the indoor unit. Some radio equipment may cause malfunction of the unit.

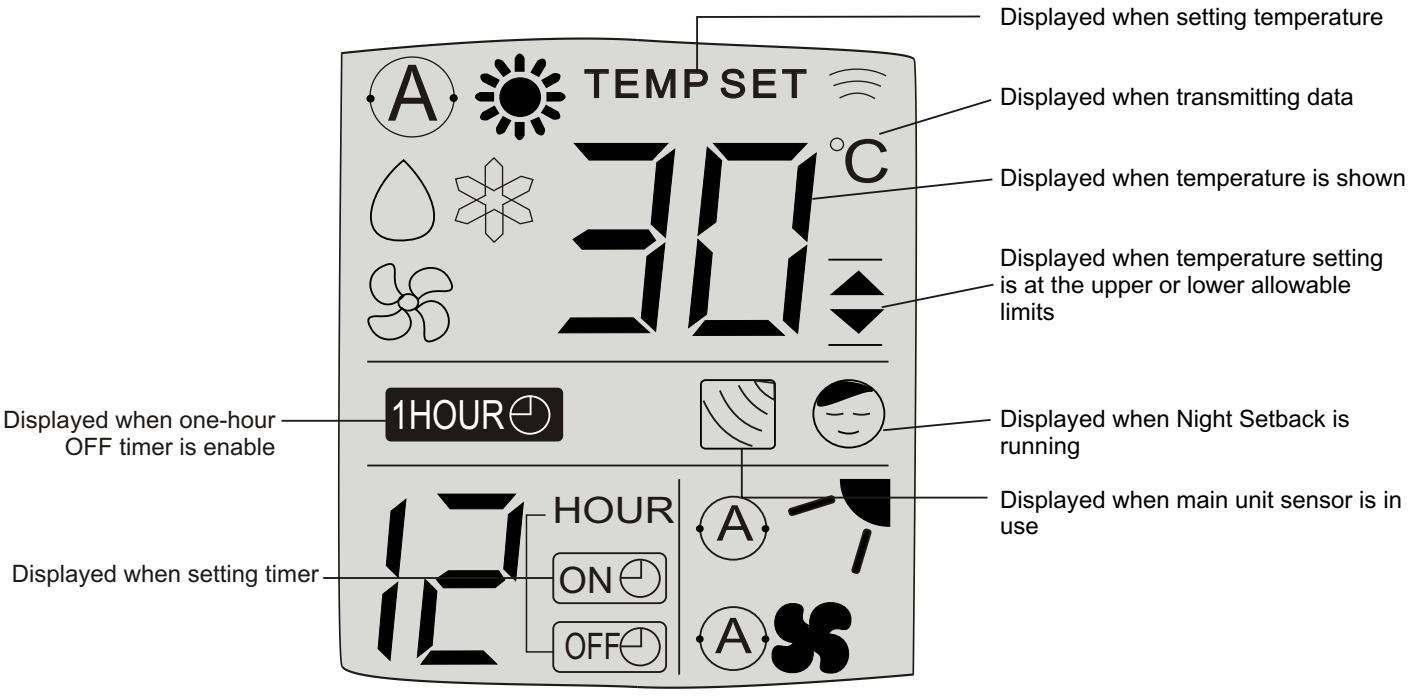
If the trouble happens, disconnect power and restart the air conditioner after a few minutes.

INDOOR UNIT



REMOTE CONTROL receiver	This section picks up infrared signals from the remote control unit (transmitter)
POWER lamp	This lamp lights when the air conditioner is in the operation mode.(But the compressor may not run at this time.)
TIMER lamp	This lamp lights when the system is being controlled by the timer.
OPERATING lamp	This lamp lights when the outdoor unit is electrified.
HIPOWER lamp	This lamp lights when the air conditioner run efficiently.
ON/OFF button	This button is set for emergent state.Please use the remote control unit to operate the air conditioner in the common state. If you have lost the remote control unit or it has trouble, use this button to turn on/off you air conditioner.(See operation without the remote control unit.)

3.Introduction of Display


Displayed when setting temperature
Displayed when transmitting data
Displayed when temperature is shown
Displayed when temperature setting is at the upper or lower allowable limits
Displayed when one-hour OFF timer is enable
Displayed when Night Setback is running
Displayed when main unit sensor is in use
Displayed when setting timer
TEMP SET
°C
1HOUR
HOUR
ON
OFF

Symbols

(1) Operation mode

AUTO ····· Ⓐ

COOL ····· ❄

HEAT ····· ☀

MILD DRY ····· 💧

FAN ····· 🌀

(2) Fan speed

Automatic operation ····· Ⓐ 🌀

HIGH ····· 🌀

MEDIUM ····· 🌀

LOW ····· 🌀

(3) Set temperature
16-30℃
When set to 28℃ ····· 28℃
Current temperature indication ·····

(4) Timer

12-hour ON Timer ····· ON

12-hour OFF Timer ····· OFF

1-hour OFF Timer ····· 1HOUR

(5) NIGHT SETBACK ····· 😴

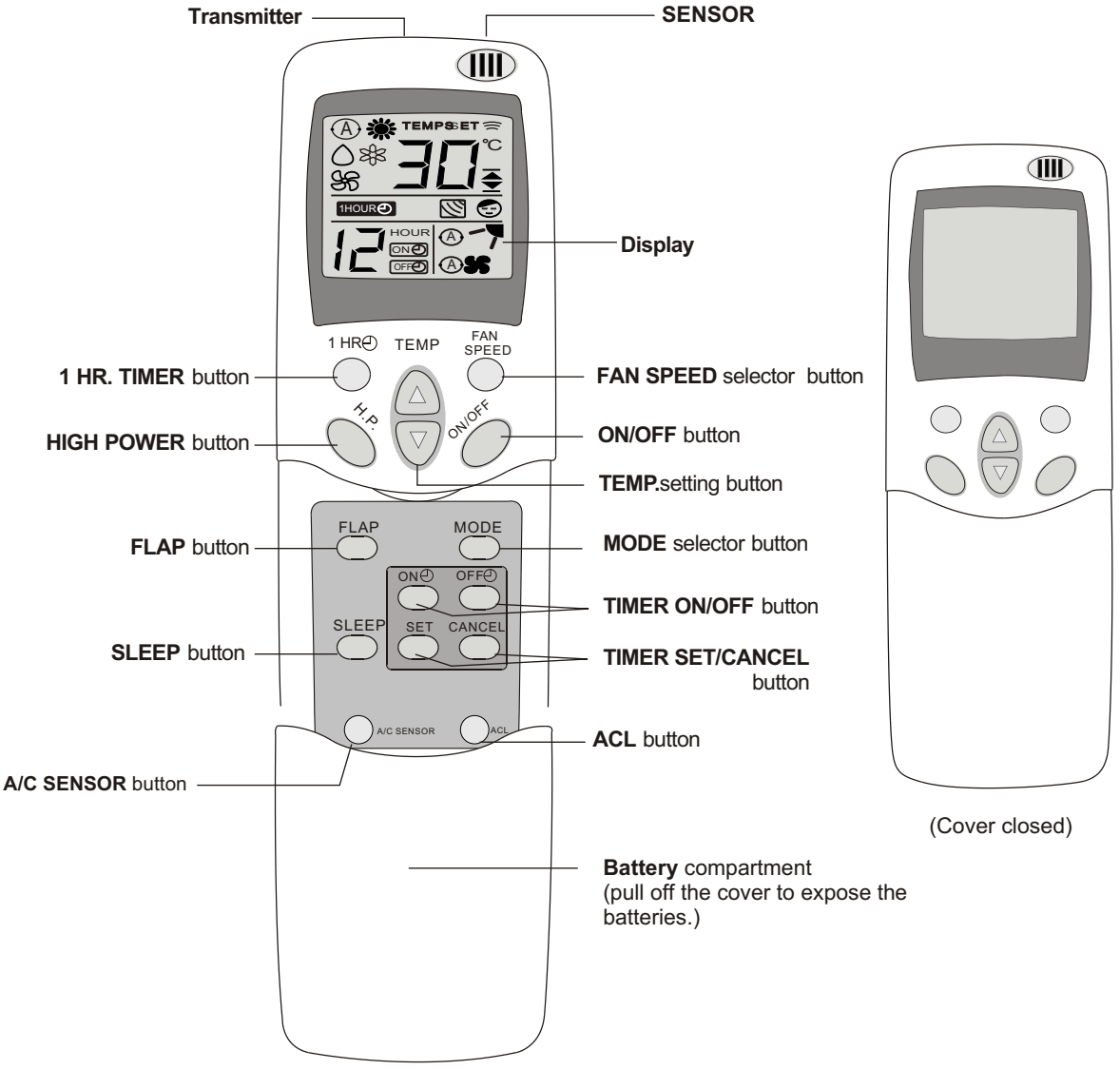
(6) Confirmation of transmission ····· 📶

(7) Flap angle indication ····· ↗

(8) Sweep indication ····· 〰

(9) Indoor unit sensor ····· 🌡

4.Introduction of the Remote control Unit



NOTE **The illustration above pictures the remote control unit after the cover has been lowered and removed.**

Transmitter	When you press the buttons on the remote control unit,the ⌔ mark appears in the display to transmit the setting changes to the receiver in the air conditioner.
SENSOR	A temperature sensor inside the remote control unit senses the room temperature.
Display	Information on the operating conditions is displayed while the remote control unit is switched on. If the unit is turned off, only the mode that was set previously is still displayed.
SLEEP button	For details, see "Night Setback Mode". When you press this button, in the HEAT, DRY or COOL mode, the mark appears in the display, the remote control unit will automatically adjust the set temperature to save energy.
TEMP. Setting buttons	Press the △ button to increase the set temperature. Press the ▽ button to reduce the set temperature.
ON/OFF operation button	This button is for turning the air conditioner on and off.

Remote Control Unit(continued)

TIMER ON button	ON :The air conditioner starts at the set time.
TIMER OFF button	OFF :The air conditioner stops at the set time.
TIMER SET/CANCEL button	This button is used to set/cancel the time at which you wish the air conditioner to go on or off.
MODE selector button **(AUTO)** **(HEATING)** **(DRY)** **(COOLING)** **(FAN)**	Use this button to select AUTO, HEATING, DRY or COOLING mode. Ⓐ :When this setting is selected, the air conditioner calculates the difference between the set thermostat and the room temperature and automatically switches to the "COOLING" or "HEATING□ mode appropriately. :The air conditioner makes the room warm. :The air conditioner reduces the humidity in the room. :The air conditioner makes the room cool. :The air conditioner makes the room's temperature suitable.
FLAP button	Press this button either to select to set the airflow direction to one of the six possible positions manually, or to select the sweep function, which moves the flap up and down automatically. :The airflow direction can be set manually.(six positions) :The flap moves up and down automatically. Ⓐ :Press the FLAP button and set the airflow directions as desired. (refer to Adjust the Airflow Direction).
FAN SPEED selector button	Ⓐ :The air conditioner automatically decides the fan speeds. : High fan speed. :Medium fan speed. :Low fan speed.
1 HR TIMER button **(1-HOUR OFF TIMER)**	1HOUR :When you press this button, regardless of whether the unit is operating or stopping, the unit operates for one hour and then shuts down.
ACL button	Puts the remote control unit into pre-operation status. Always press this button after replacing the batteries.
A/C SENSOR button **NOTE**	When you press this button (use a small-tipped object such as a ballpoint pen), the mark will appear at the display. And the room temperature is detected by the sensor which is built into the indoor unit and the air conditioner is controlled accordingly. If the remote control is located near a heat source, such as a space heater or indirect sunlight, press the A/C SENSOR button to switch to the sensor in the indoor unit.

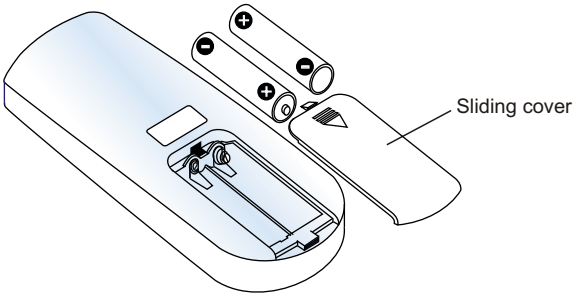
Automatic switching between cooling and heating

This unit automatically switches between cooling operation and heating operation according to the difference between the room temperature and the set temperature.

NOTE **The remote control unit sends the temperature signal to the air conditioner regularly at three minute intervals. If the signal from the remote control unit stops for more than ten minutes due to the loss of the remote control unit or other trouble, the air conditioner will switch to the temperature sensor which is built into the indoor unit and control the room temperature. In these cases, the temperature around the remote control unit may differ from the temperature detected at the air conditioner's position.**

HOW TO INSTALL BATTERIES

1. Slide the cover in the direction indicated by the arrow and remove it.
2. Install two AAA alkaline batteries. Make sure the batteries point in the direction marked in the battery compartment.
3. Use a thin object such as the tip of a pen to press the ACL button.

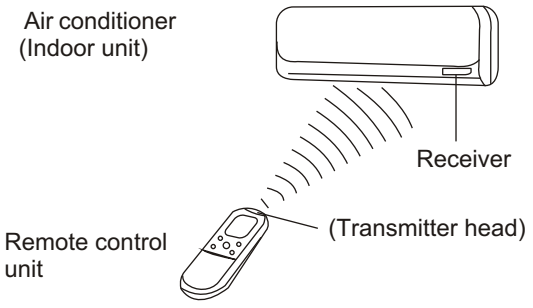


NOTE

- **Replace the batteries when the remote control unit's display fails to light, or when the remote control unit cannot be used to change the air conditioner's settings.**
- **Use two fresh leak-proof type-AAA alkaline batteries.**
- **In replacing batteries, follow the instructions as mentioned in the sub-section "How to Install Batteries".**
- **If you do not use the remote control unit more than 1 month, take out the batteries.**

HOW TO USE THE REMOTE CONTROL UNIT

When using the remote control unit, always point the unit's transmitter head directly at the air conditioner's receiver.



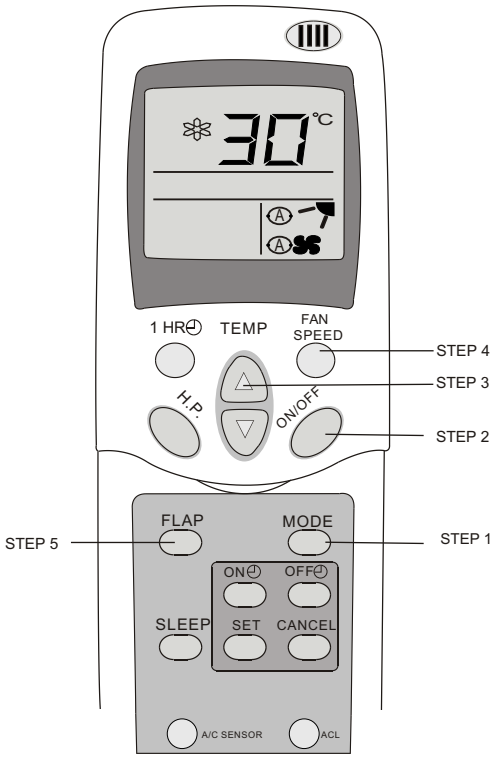
REMOTE CONTROL UNIT INSTALLATION POSITION

To ensure that the air conditioner operates correctly, DO NOT install the remote control unit in the following places:

DO NOT

- In direct sunlight
- Behind a curtain or other places where it is covered
- More than 8 meters away from the air conditioner
- In the path of the air conditioner's airstream
- Where it may become extremely hot or cold
- Where it may be subject to electrical or magnetic noise
- Where there is an obstacle between the remote control unit and the air conditioner

Operation with the Remote Control Unit(continued)



NOTE Check that the circuit breaker on the power panel is turned on and that the operation selector of the indoor unit is in the ON position.

If the automatic operation settings of the unit do not meet your needs, press the setting buttons as described below and change the settings as desired.

STEP 1	Press the MODE selector button and select the desired mode. For heating operation → For dehumidifying operation → For cooling operation → For automatic operation → For fan operation →
STEP 2	To start the air conditioner, press the ON/OFF operation button.
STEP 3	Press the TEMP setting button to change the temperature setting to the desired temperature . Adjustable temperature range: 30℃ max. 16℃ min.
STEP 4 **NOTE**	Set the FAN SPEED selector button to choose the fan speed you want. If the fan speed is set to Ⓐ (Automatic), the fan speed switches automatically, according to the difference between the actual room temperature and the set temperature.
STEP 5	Press the FLAP button and set the airflow direction as desired.

To stop the air conditioner, press the ON/OFF operation button again.

Adjusting the Fan Speed

A. Automatic

Simply set the FAN SPEED selector to the Ⓐ position.

A microprocessor in the air conditioner automatically controls the fan speed when the Ⓐ mode is selected. When the air conditioner starts operating, the difference between the room temperature and the set temperature is detected by the microprocessor which then automatically switches the fan speed to the most suitable level.

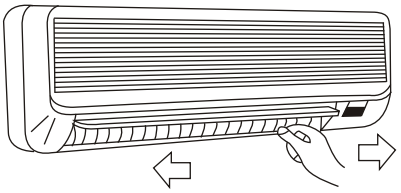
B. Manual

If you want to adjust fan speed manually during operation, just set the FAN SPEED selector as desired.[}} (High), } (Medium), or (Low)]

Adjusting the Airflow Direction

1. Horizontal

The horizontal airflow can be adjusted by moving the vertical vanes with your hands to the left or right.

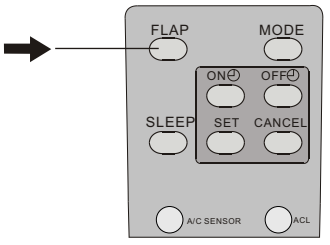


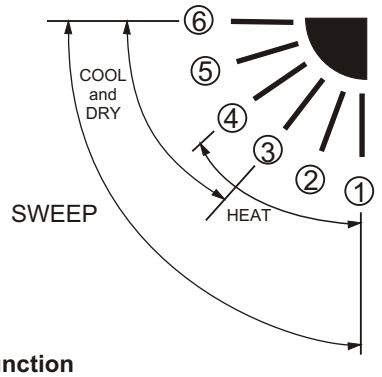
CAUTION

When the humidity is high, the vertical vanes should be in the front position during the cooling or dehumidifying operation. If the vertical vanes are positioned all of the way to the right or left, condensation may begin to form around the air vent and drip down.

2. Vertical

The vertical airflow can be adjusted by moving the flap with the remote control unit Do not move the flap with your hands.Confirm that the remote control unit has been turned on. Then, use the FLAP button to set either the sweep function or one of the six airflow direction settings.





A.Sweep function

The flap starts moving up and down to deliver air over the sweep range.

B.Automatic Function

The flap moves up and down automatically from ⑥ to ③ during the cooling or drying operation, from ④ to ① during the heating operation. Referring to the above illustration.

NOTE

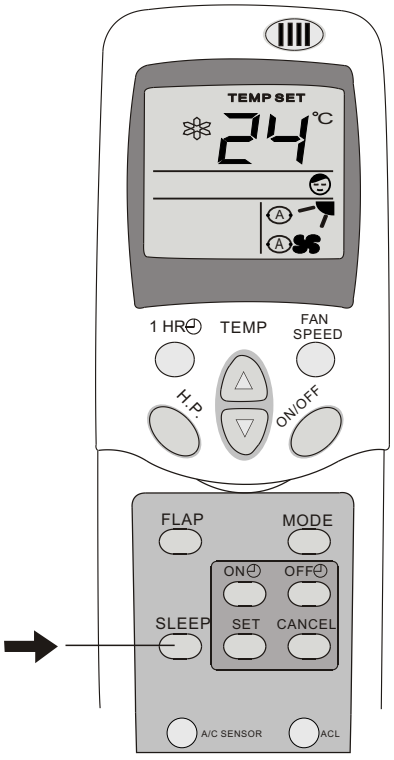
●The flap automatically closes when the unit is off.

CAUTION

Use the FLAP button on the remote control to adjust the position of the flap. If you move the flap by hand, the flap position according to the remote control and the actual flap position may no longer match.If this happens,shut off the unit, wait for the flap to close, and then turn on the unit again; the flap position will now be normal again.

Do not have the flap pointed down during cooling operation. Condensation may begin to form around the air vent and drip down.

Night Setback / Simultaneous Use Energy Saving

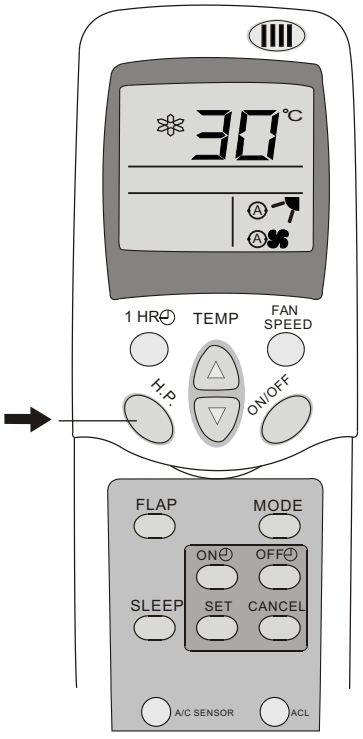


Night Setback Mode

Night Setback Mode is used for saving energy. Press the SLEEP button in operation. The mark appears in the display. To release the night setback function, press the SLEEPbutton again.

NOTE This function loses in automation or airflow mode.

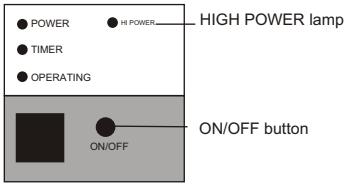
HIGH POWER Operation



This operation makes higher or lower temperature airflow than usual, in winter or summer, which makes you feel comfortanble as soon as you go home.

Setting procedure:

Press the High Power button on the remote control unit gently, with a whisper, and the HIPOWER-lamp on the display panel is lighted , so the high efficient operation comes to work. It may last the longest time of 15 minutes.

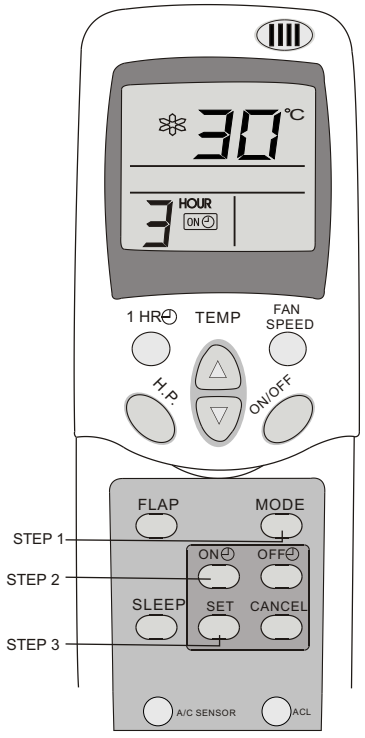


Cancellation procedures:

Press the HIGH POWER button again, with a second whisper, the lamp is out.

Using the 12-Hour ON and OFF Timer

1.TIMER ON mode (Example)



After the length of time set for TIMER ON elapses, the unit begins operating.
The display depicted at left indicates that the air conditioner will begin operating in three hours.

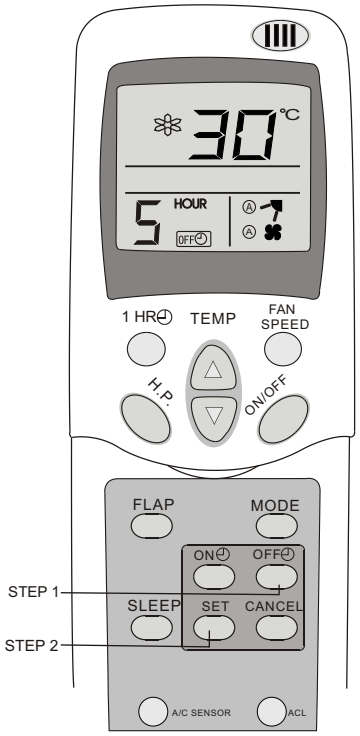
Setting Procedures:

STEP 1	Press the MODE button and set the desired operation mode and press the ON/OFF operation button.
STEP 2	Press the timer ON button to set the time at which you want operation to begin. The time can be set for one to twelve hours, in one hour steps. → 1 → 2 → 3..... 12 →
STEP 3	Press the timer SET button (which advances the time displayed).

- The display changes immediately to its status previous to timer setting, but the ON indication remains.
- To check the status of the timer while it is counting down, press the timer SET button .

Cancellation procedure: Press the CANCEL button once again.

2.TIMER OFF mode (Example)



After the length of time set for TIMER OFF elapses, the unit stops operating.
The display depicted at left indicates that the air conditioner will stop operating in five hours.

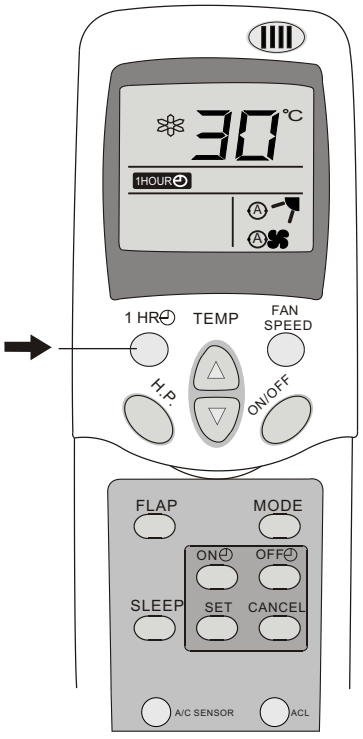
Setting Procedure:

STEP 1	Press the timer OFF button to set the time at which you want operation to stop. The time can be set for one to twelve hours, in one hour steps. → 1 → 2 → 3..... 12 →
STEP 2	Press the timer SET button (which advances the time displayed).

- The display changes immediately to its status previous to timer setting, but the OFF indication remains.
- To check the status of the timer while it is counting down, press the timer SET button .

Cancellation procedure: Press the CANCEL button once again.

Using the 1-Hour OFF Timer



This function causes the unit to operate for one hour and then stop, regardless of whether the unit is on or off when this button is pressed.

The 1HOUR indicator in the display indicates that this function is operating.

Setting procedure:

Regardless of whether the unit is operating or stopped, press the 1 HR .TIMER button. 1HOUR Appears in the display.

Cancellation procedure:

Press the ON/OFF operation button to turn the unit off, wait for the unit to stop operating, and then press the ON/OFFoperation button again. The 1-Hour Timer function is now cancelled and the unit operates normally.

NOTE

If, while the 1-Hour Timer function is operating, the 1 HR.TIMER button is pressed once to cancel the function and then again, the unit continues to operate for one hour from that point in time and then stops.

If the 1 HR.TIMER button is pressed while the TIMER OFF function operates,the OFF Timer is cancelled and the unit will stop operating one hour later.

Special Remarks

Heating (☼) Operation

Heating performance

- Because this air conditioner heats a room by drawing on the heat of the outside air (heat pump system), the heating efficiency will fall off when the outdoor temperature is very low. If sufficient heat cannot be obtained with this air conditioner, use another heating appliance in conjunction with it.

Defrosting

- When the outdoor temperature is low, frost or ice may from in the heat exchanger coil, reducing heating performance. When this happens, a microcomputer defrosting system will operate. At the same time the fan on the indoor unit stops (or runs at very low speed in some cases). Heating operation restarts after several minutes. (This interval will vary slightly depending upon the outdoor temperature and the way in which frost forms).

- For several minutes after the start of heating operation, the indoor fan will not start running until the indoor heat exchanger coil has warmed up sufficiently. This is because the COLD DRAFT PREVENTION SYSTEM is operating.

POWER lamp

- The POWER lamp also remains lit during defrosting or when the compressor has been turned off by the thermostat when the system is in the heating mode.

Power failure during operation

- In the event of power failure, the unit will stop. When the power is resumed, the unit will restart automatically after three minutes.

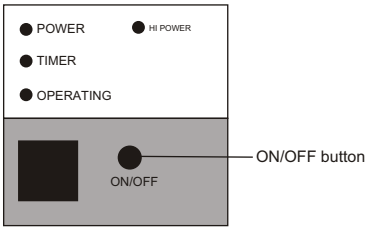
Clicking Sound

Clicking sound is heard from the air conditioner

- In heating or cooling operation. Some plastic parts may expand of shrink due to a sudden temperature change. In this event, a clicking sound may occur. This is normal, and the sound will soon disappear.

- The remote control unit sends the temperature signal to the air conditioner regularly at three-minute intervals. If the signal from the remote control unit stops for more than ten minutes due to the loss of the remote control unit or other trouble, the air conditioner will switch to the temperature sensor which is built into the indoor unit and control the room temperature. In these cases, the temperature around the remote control unit may differ from the temperature detected at the air conditioner’s position.

Operation without the Remote Control Unit



If you have lost the remote control unit or it has trouble, follow the steps below.

1.When the air conditioner is not running
If you want to turn on the air conditioner, pressing the ON/OFF button once.

2.When the air conditioner is running
If you want to turn off the air conditioner, pressing the ON/OFF button once.

NOTE

Pressing buttons cannot last too long time, or the air conditioner may operate abnormally.

Care and Cleaning

WARNING

1.For safety, be sure to turn the air conditioner off and also to disconnect the power before cleaning.
2.Do not pour water on the indoor unit to clean it. This will damage the internal components and cause an electric shock hazard.

Clean the casing and grille of the indoor unit with a vacuum cleaner brush, or wipe them with a clean, soft cloth.

If these parts are stained, use a clean cloth moistened with a mild liquid deteraent. When cleaning the grille, be careful not to force the vanes out of place.

CAUTION

1.Never use solvents, or harsh chemicals when cleaning the indoor unit. Do not wipe the plastic casing using very hot water.
2.Some metal edges and the fins are sharp and may cause injury if handled improperly; be especially careful when you clean these parts.
3.The internal coil and other components of the outdoor unit must be cleaned every year.Consult your dealer or service center.

Care and Cleaning (continued)

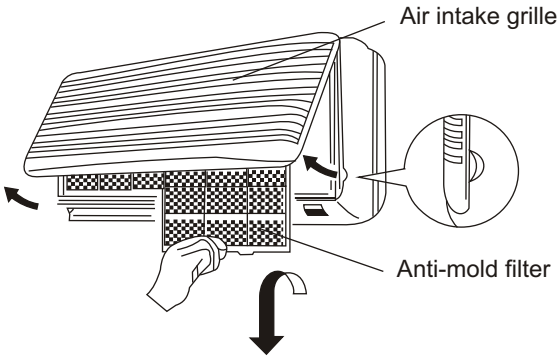
Anti-Mold Filter

The anti-mode filter behind the air intake grille should be checked and cleaned at least once every three weeks.

How to remove the anti-mold filter

1.Grasp both ends of the air intake grille and pull it out and up.

2.Push the anti-mold filter up slightly, and then pull it down.



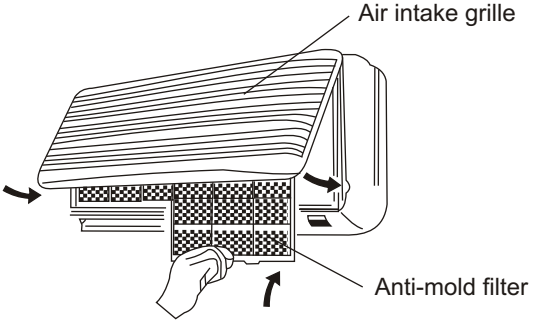
Anti-Mold Filter Cleaning

Use a vacuum cleaner to remove light dust. If there is sticky dust on the filter, wash the filter in lukewarm, soapy water, rinse it in clean water, and dry it.

How to replace the anti-mold filter

1.Slide the anti-mold filter up into the unit and then lower the handle into the groove on the unit.

2.After installing the anit-mold filter, press the locations marked by the arrows (⇩) and close the air intake grille.



Air Clean Filter (not provided)

The air cleaning filter removes dust and dirt from the air, and reduces odors and somke from tobacco.

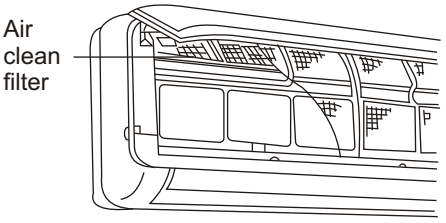
WARNING

This air clean filter cannot remove harmful gases or vapors nor ventilate air in the room. You must open doors or windows frequently when you use gas or oil heating appliances.Otherwise there is a risk of suffocation in extreme cases.

How to install the air clean filter

The air clean filter needs to be installed behind the anti-mold filter.

1. Remove the anti-mold filter.
2. Install the air clean filter in the position shown in the diagram.
3. Reinstall the anti-mold fillter.



Tips for Energy Saving

Do not

- Block the air intake and outlet of the unit. If they are obstructed, the unit will not work well, and may be damaged.
- Let sunlight directly into the room. Use sunshades, blinds or curtains. If the walls and ceiling of the room are warmed by the sun, it will take longer time to cool the room.

Do

- Always try to keep the air filter clean. (Refer to "Care and Cleaning".)A clogged filter will impair the performance of the unit.
- To prevent conditioned air from escaping, keep windows, doors and any other openings closed.

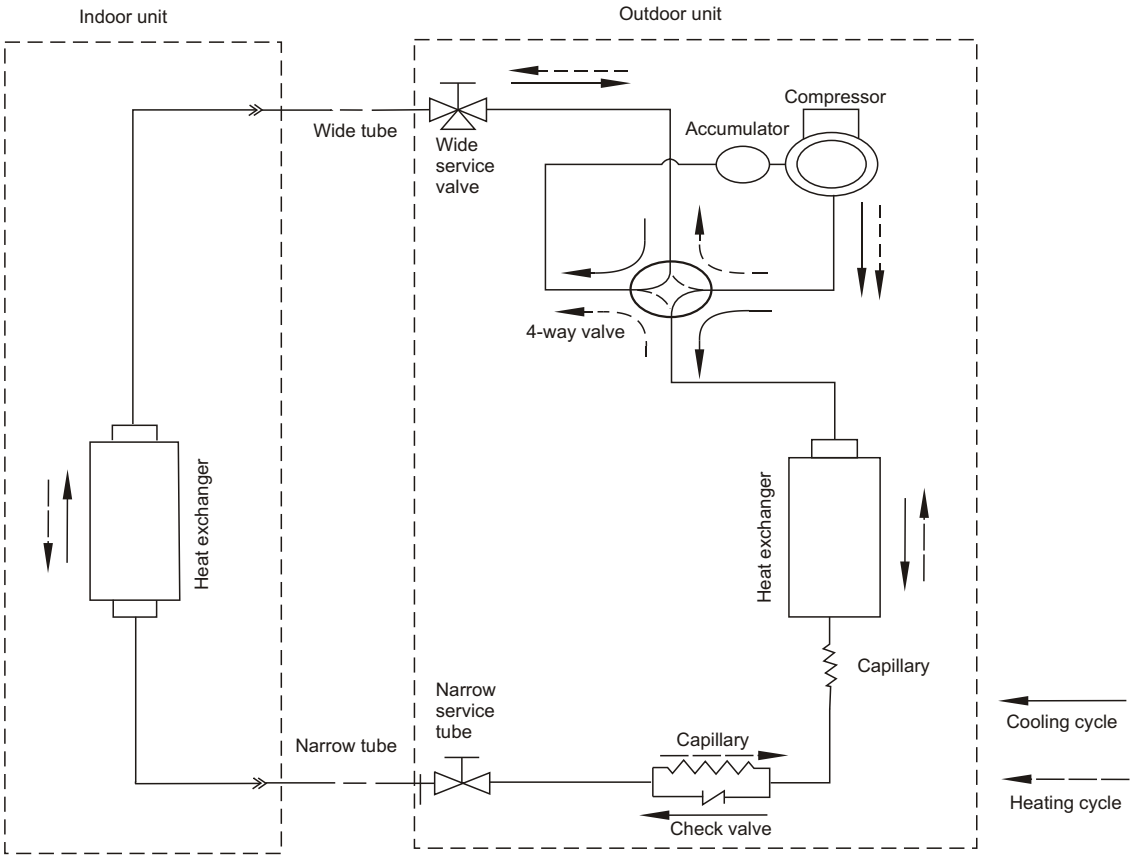
Troubleshooting

If your air conditioner does not work properly, first check the following points before requesting service. If it still does not work properly, contact your dealer or service center.

Trouble	Possible Cause	Remedy
Air conditioner does not run at all.	1.Power failure. 2.Leakage breaker tripped. 3.Line voltage is too low. 4.Operation button is OFF. 5.Batteries in remote control unit have run down.	1.Restore power. 2.Contact service center. 3.Consult your electrician or dealer. 4.Press the button again. 5.Replace batteries.
OPERATING lamp flashes while air conditioner does not operate.	Trouble in wiring system.	Contact servicer center.
Compressor runs but soon stops.	Obstruction in front of condenser coil.	Remove obstruction.
Poor cooling (or heating) performance	1.Dirty or clogged air filter. 2.Heat source or many people in room. 3.Doors and/or windows are open. 4.Obstacle near air intake or air discharge port. 5.Thermostat is set too high for cooling(or too low for heating). 6.(Outdoor temperature is too low.) 7.(Defrosting system does not work.)	1.Clean air filter to improve airflow. 2.Eliminate heat source if possible. 3.Shut them to keep the heat (or cold) out. 4.Remove it to ensure good airflow. 5.Set the temperature lower.(or higher) 6.(Try to use a back-up heater.) 7.(Consult your dealer.)
Clicking sound is heard from the air conditioner.	In heating or cooling operation, some plastic parts may expand or shrink due to a sudden temperature change. In this event, a clicking sound may occur.	This is normal, and the sound will soon disappear.
OPERATING lamp lights but outdoor unit will not run.	1.The use of portable telephones near the air conditioner may cause disturbance to its normal operation. 2.Restart the air conditioner after turn off the power immediately.	1.Turn off the power then restart the air conditioner after 3 minute. 2.The unit will restart automatically after three minutes.

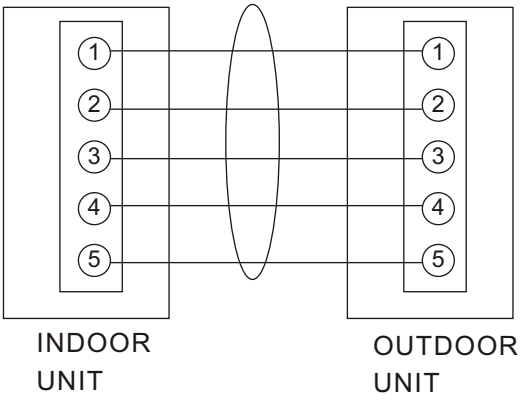
Schematic Diagram

1. Refrigerant Flow Diagram



2. Permitted ambient temperature for the air conditioner is following:-7℃~+43℃.

3. Electric Wiring Diagram



Appendix: Installation

⚠ Warning: Carrying out operations displaying this symbol may result in fatal injury.

⚠ Caution: Carrying out operations displaying this symbol may result in serious injury.

This operation manual has explicit information for installation and maintenance in most conditions. Contact the local distributor or after-sales service for further information.

A. Wiring
- Only qualified professionals should carry out wiring of the appliance.
- Disconnect the power supply before completion of wiring, piping or checking the appliance.
- Voltages generated by the appliance is fatal. Read the electrical schematic diagram and explanation before installation. Improper installation and earth connection may result in fatal injury.
- Connect the earth as required by local wiring regulations.
- Tightly fasten all the wiring connections to prevent overheating or fire.
- Special power source, switches and sockets are required for the power supply of the appliance.
- Electric meter capacity must be larger than or equivalent to 16A.

B. Transport
- Carefully move the outdoor unit.

C. Installation
----When the appliance is mounted to the ceiling or the wall,
- Make sure that the ceiling or the wall is strong enough for the appliance.
- Make a wood or metal frame to support the appliance if necessary.

----When the appliance is mounted in a room,
- Properly insulate the tube of indoor unit, and make sure there is no water drops on the appliance or on the floor.

----When the appliance is installed on a damp or uneven area,
- Make a flat concrete base and place the base under the outdoor unit.

----When the appliance is installed in an area of strong winds.
- Using anchor bolts and metal frames to fix the properly covered outdoor unit.

----When the appliance (Model Heat Pump) is installed in an area of heavy snow.
- The outdoor unit must be installed in a position above the snow accumulation.

D. Connection
- Use the shortest tubes possible
- Using a flaring method
- Smear some refrigeration oil between the flared surface and the connected tube.
- Fasten the nuts with a torque wrench to prevent leakage of refrigerant.
- Check for leakage before trial operation.

E. Maintenance
- Disconnect the power before checking the electrical components and the circuits.
- Avoid contact with the moving parts of the appliance.
- Clear the site and make sure there is no installation debris left in the appliance.

F. Other
- Keep the room well ventilated during installation.

1. Summery

Read the operation manual before installation and keep this manual in a safe place.

1-1 Tools
1. Screwdriver
2. Phillips head screwdriver
3. Knife or wire stripper
4. Steel ruler
5. Spirit level
6. Hammer
7. Percussion drill
8. Tube cutter
9. Tube flarer
10. Tube bender
11. Adjustable spanner

1-2 Attachment
(see the packing list)

1-3 Parts Package
Copper tubes, components and insulation materials for the outdoor unit.

1-4 Type of the copper tube and insulation materials

1. Following table indicates that tubes should be cut with an additional length of 30cm-40cm, to reduce the vibration from the outdoor unit.

Narrow tube		Wide tube	
Outside Diameter	Thickness	Outside Diameter	Thickness
6.35mm	0.8mm	9.52mm	0.8mm

2. The insulation materials for the copper tubes should conform to the required length and the wall thickness should not be less than 8mm.
3. Insulated copper wires should be used for wiring and the specification should depend on the length.

1-5 Additional materials for installation
1. white tape
2. nails or clips (as required)
3. putty
4. refrigeration oil
5. clips for fixing refrigerant tubes

Appendix: Installation

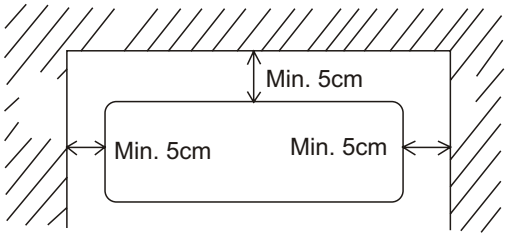
2. Location

2-1 Indoor unit

WARNING: Maintain the required space around the appliance to prevent overheat.

The area for installation of the appliance should not be in an area with the following:
- Direct sunlight
- Heat resource
- Inflammable gas
- Thick oil fog

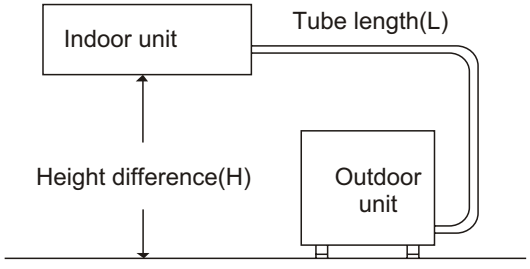
The appliance should be installed in an area,
- Where the inside space can be evenly conditioned, or
- Which is strong enough for the appliance, or,
- Having the shortest distance for the copper tubes and water drain hose, and
- Having desired space around the appliance for maintenance and ventilation.



Tube arrangement

L	H	Add. Refrigerant (g/m)	Provided Tube(M)
15	7	25	4

L: Maximum length of the tube connecting the indoor unit and the outdoor unit.
H: The height difference between the indoor unit and the outdoor unit.

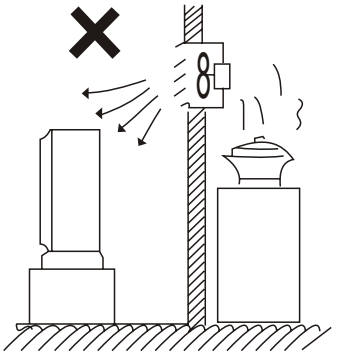


- If the length of the tube is between 7.5m to 15m(maximum length), an additional 25g/m of refrigerant should be added . Additional compressor oil must not be added.

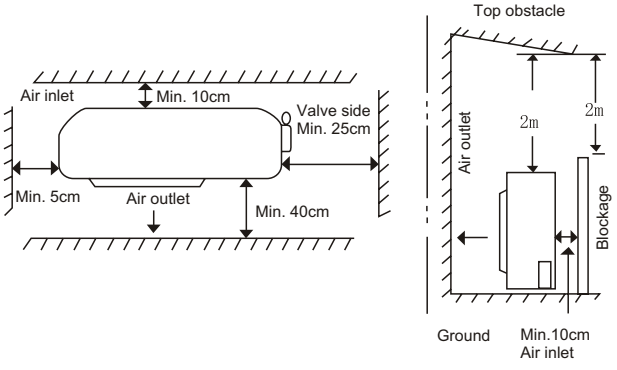
CAUTION: The indoor unit should not be installed below a height of 1.8m.

2-2 Outdoor unit

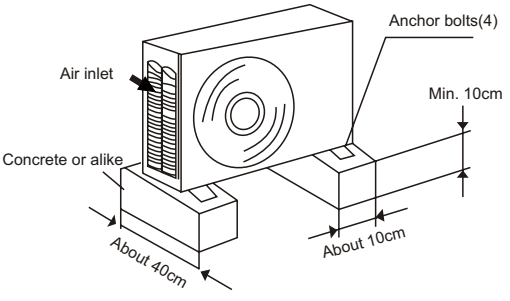
The outdoor unit should be installed away from the following:
- Heat source and fan exhausting ;
- Director sunlight;



The outdoor unit should be installed in an area with,
- Cool temperature;
- Good ventilation;
- Desired space for air inlet, outlet and maintenance



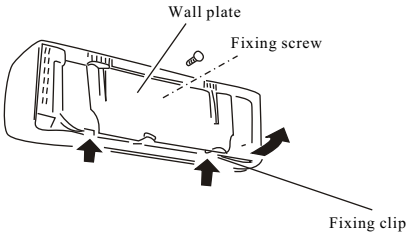
- Strong base (10x40cm^2 concrete or alike). The appliance should be placed not less than 10cm high.



- Fix the base with anchor bolts to reduce vibration and noise.

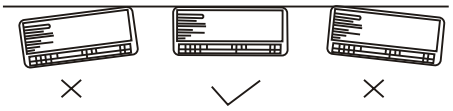
Appendix: Installation

3. Installation of the indoor unit



Remove the wall plate

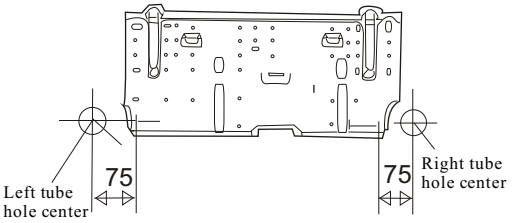
(1)Remove the fixing screws and keep them for future use (not used during installation).
(2)Press the two triangular signs on the outer shell and remove the fixing clip.
(3)Remove the wall plate.



Mount the wall plate

(1)Determine the correct position of the plate with a level (never use the naked eyes!). The plate should be level.
(2)Fix the plate with 6mm expansion bolts for cement walls and with wood screws for wood or plaster walls.

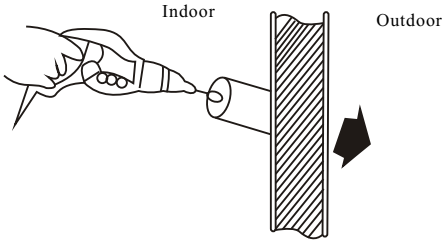
> Caution: Adequate space should be reserved for the installation of the indoor unit. To avoid running noise and vibration, the wall plate should be fixed tightly on the wall.



Make the wall hole

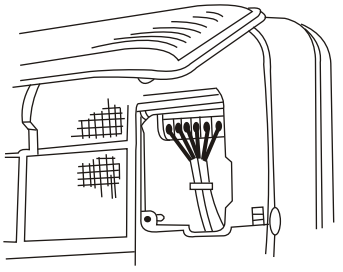
Select the position of the hole according to the positions of the indoor and outdoor units. The hole should be slightly lower than the wall plate.
The diameter of the hole is 65mm and the hole should be made with the outside end a little lower.
The site should be cleaned after the hole is made.

> Caution: Check carefully before the hole is drilled to make sure that there is no cables or tubes in the area.



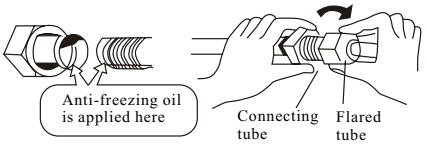
Connect the tubes of the indoor unit

A. Connect the electric wires
(1)Open the front panel and remove the cover of the electric box.
(2)Remove the wire clip in the electric box.
(3)Put in the wires from the back of the indoor unit and pull them out from the front.
(4)Connect the wires firmly to the terminal panel.
(5)Fix the wires with the clip, replace the cover and close the front panel.



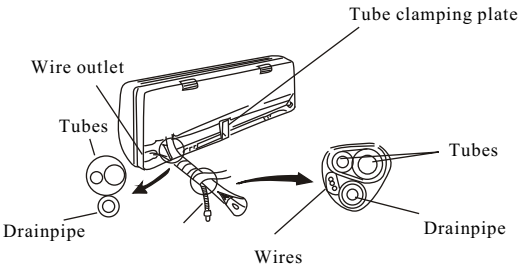
> Caution: Make sure that the numbers of the terminals are the same as those of the terminal panel.

B. Connect the tubes
(1)Do not let dust, dirt, air and water into the tubes during installation, so never remove the tube plugs if installation is not due.
(2)Remove the nuts at the tube joints of the indoor unit, align the center of the tube flare (apply anti-freezing oil on the cone head), tighten the cone-shaped nuts with the hand first, then tighten up with a spanner.

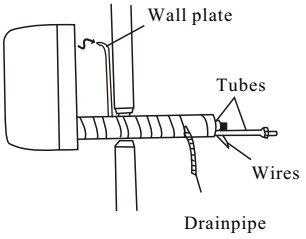


> Caution: Avoid leakage from loose connection or damage of the flare from over-tightening.

(3)Any part of the drainpipe should be below the outlet of the indoor unit and the joints should be wrapped with waterproof adhesive tape to prevent leakage of condensed water.
(4)Bind the tubes, wires and the drainpipe tightly with binding tape, with the drainpipe under the wires.
(5)Press down the clamping plate of the tubes and fix the bound wires.

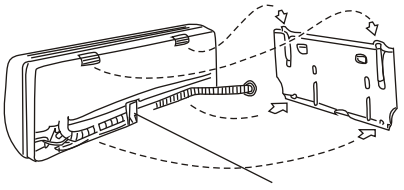


Install the indoor unit
(1)Pull the bound wires out through the wall hole and put the indoor wires together with the indoor unit at the corresponding place of the wall plate.
(2)Hook the indoor unit onto the retaining claws on the wall plate and move the unit body slightly to make sure that it is firm.
(3)Hold the two sides of the unit body and press it to the wall plate to ensure secure connection.



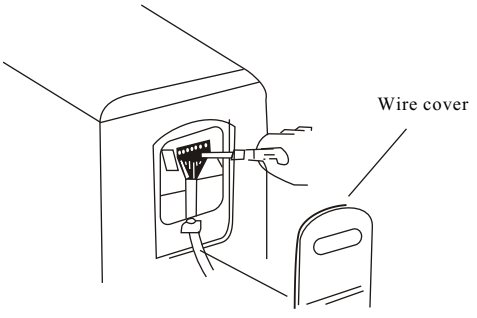
4. Installation of the outdoor unit

Mount the outdoor unit
A. Mount the outdoor unit in the selected place.
B. If the outdoor unit is to be mounted on the wall, the wall and the installation bracket should have sufficient intensity to bear the weight of the outdoor unit.
(1)Place the outdoor unit carefully onto the bracket.
(2)Fix the unit onto the bracket with four bottom bolts. The bolts should have anti-vibration pads to prevent falling down of the unit from vibration.



Connect the tubes of the outdoor unit
A. Electric wires
(1)Remove the wire cover of the outdoor unit with a screwdriver.
(2)Remove the wire clip.
(3)Connect the wires to the corresponding terminals on the terminal panel.

> Caution: All the "Y"-shaped terminals should be plugged into the line bank and the grounding loop terminal should be connected fully.



(4)Tighten all the screws to ensure good connection.
(5)Put the wires into place with a clip and replace the wire cover.

> Caution: Never put extra wires into the wire compartment to avoid damage from eddying flow heating.

B. Tubes

The connection of the outdoor tubes is the same as steps (1) and (2) of the indoor unit.

Appendix: Installation

5.Air purging

Air and moisture remaining in the refrigerant system have undesirable effects as indicated below. Therefore, they must be purged completely.

- pressure in the system rises
- operating current rises
- cooling efficiency drops
- moisture in the air may freeze and block capillary tubing
- water may lead to corrosion of parts in the refrigerant system

Air Purging with a Vacuum Pump (for Test Run)

(1)Check that each tube (both narrow and wide tubes between the indoor and outdoor units have been properly connected and all wiring for the test run has been completed. Note that both narrow and wide tube service valves on the outdoor unit are kept closed at this stage.

(2)Using an adjustable wrench or box wrench, remove the valve caps from the service valve on both narrow and wide tubes.

(3) Connect a vacuum pump and a manifold valve (with pressure gauges) to the service port on the wide tube service valve.(Fig.A)

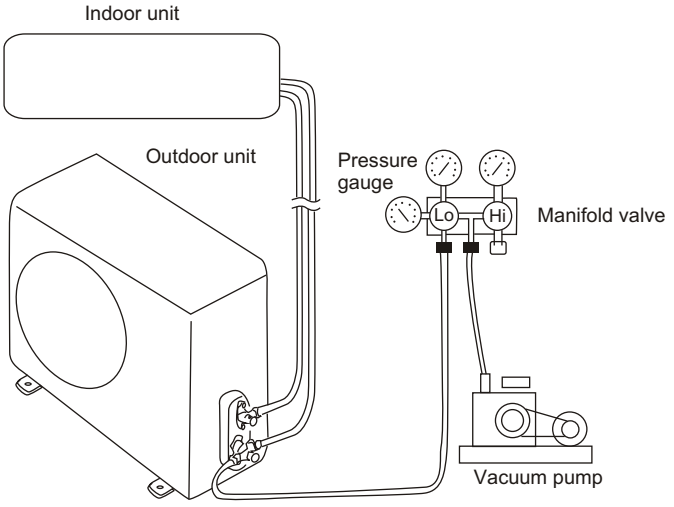


Fig.A

CAUTION

Be sure to use a manifold valve for air purging. If it is not available, use a stop valve for this purpose. The Hi knob of the manifold valve must always be kept closed.

(4)With the Lo knob of the manifold valve open, run the vacuum pump. The operation time for the vacuum pump varies with tubing length and the capacity of the pump. The following table shows the amount of time for evacuation:

Table

Required time for evacuation when capacity of 100 liter/h vacuum pump is used	
If tubing length is less than 10 m	If tubing length is more than 10 m
10 min. or more	15 min. or more

NOTE

The required time in the above table is calculated based on the assumption that the ideal (or target) vacuum condition is around 10 mmHg abs.

(5) With the vacuum pump still running, close the "Lo" knob of the manifold valve. Then stop the vacuum pump.

(6)With the accessory hex wrench, turn the valve stem on the narrow tube service valve counterclockwise by 90 degrees (1/4 turn) for 10 seconds, and then turn the stem clockwise to close it again. (Fig.B)

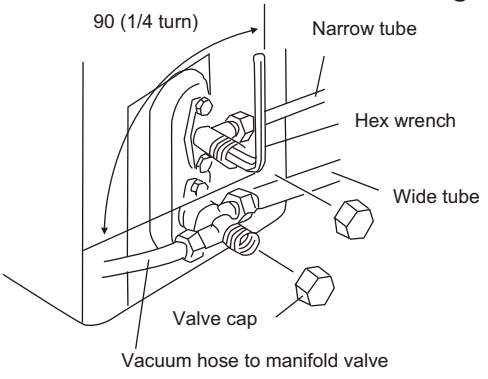


Fig.B

CAUTION

Be sure to completely insert the hex wrench before attempting to turn the valve.

(7)Leak test all joints at the tubing (both indoor and outdoors) with liquid soap. Bubbles indicate a leak. Be sure to wipe off the soap with a clean cloth.

(8)With the hex wrench, turn the wide tube service valve stem counter-clockwise to fully open the valve.

(9)Turn the narrow tube service valve stem counter-clockwise to fully open the valve.

(10)Loosen the vacuum hose connected to the wide tube service port slightly to release the pressure. Then, remove the hose.

(11)Replace the bonnet and flare nut on the wide tube service port and fasten the flare nut securely with an adjustable wrench or box wrench. Next, mount the valve cap and tighten it with a torque wrench (the cap needs to be tightened with the torque of 200kg-cm). This process is very important to prevent gas from leaking from the system.

(12)Test run the air conditioner.

(13)While the air conditioner is running, apply liquid soap to check for any gas leaks around the service valves or caps.

(14)If there is no leakage, stop the air conditioner.

(15)Wipe off the soap on the tubing.

This completes air purging with a vacuum pump and the air conditioner is ready for actual operation.

6. Please contact the technical service for further information.

PACKING LIST

NO.	NAME	AMOUNT
1.	OUTDOOR UNIT	1
2.	POWER CABLE	1
3.	DRAINAGE ELBOW *	1
4.	AIR FRESH FILTER	1
5.	INDOOR UNIT	1
6.	MANUAL	1
7.	REMOTE CONTROL UNIT	1
8.	BATTERY	2
9.	NAIL SPECIAL	6

THE SYMBOL "*" STANDS FOR THE PART TO BE PICKED AND MADE PURCHASE.